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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/977,725	10/15/2001	Teemu Ikonen	0141US-First-Hop	3321
23521	7590	06/17/2005	EXAMINER	
SALTAMAR INNOVATIONS 30 FERN LANE SOUTH PORTLAND, ME 04106			JEAN GILLES, JUDE	
			ART UNIT	PAPER NUMBER

2143

DATE MAILED: 06/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/977,725

Applicant(s)

IKONEN, TEEMU

Examiner

Jude J. Jean-Gilles

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on February 28th, 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This Action is in regards to the Reply received on 28 February, 2005.

Response to Amendment

2. This action is responsive to the application filed on February 28th, 2005. Claims 1-25 are pending, of which claims 1, 14, 15, and 20 are independent; no new claims have been added, and claim 1 have been amended. Claims 1-25 represent a method and apparatus for "rerouting IP Transmission".

3. Applicant's arguments with respect to claim 1, 15 and 20 have been carefully considered, but are not deemed fully persuasive. Applicant's arguments are deemed moot in view of the following new ground of rejection as explained here below, necessitated by Applicant substantial amendment (*i.e., rerouting the packet and redirection header to the source address instead of the service address*) to the claims which significantly affected the scope thereof.

4. The dependent claims stand rejected as articulated in the First Office Action and all objections not addressed in Applicant's response are herein reiterated.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCanne et al (U.S. Patent No. 6,785,704) in view of Albert et al (U.S. 6,650,641 B1).

Regarding claim 1: McCanne et al disclose the invention substantially as claimed. McCanne et al teach a method for rerouting network traffic, operating in conjunction with a server cluster comprising at least a first and a second server (*fig. 1, items 10, and 14*), the method comprising the steps of:

receiving a packet in a first server, the packet containing indication of a source address (*column 24, lines 38-41, and 58-62*);

McCanne et al further teach adding a redirection header to the packet (*column 26, lines 26-34*). However McCanne et al fail to specifically disclose a redirection header that includes a service address belonging to the second server; and, that transmits the packet and redirection header to the service address.

In the same field of endeavor, Albert et al disclose "Service Managers that use a special method such as tunneling or tag switching to send the packets to a destination (server) other than the destination specified by the destination IP address included in the packet header." [see Albert; *column 6, lines 61-67; column 7, lines 1-7*].

Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time the invention was made to have incorporated Albert et al's teachings of using a redirection address belonging to a second server with the teachings of Barnes et al, for the purpose of improving the ability of a network "...to *configure its policies and information based of load measurement to determine an appropriate place to terminate a requesting client.*" as stated by McCanne et al in lines 31-34 of column 26. By this rationale, **claim 1** is rejected.

Regarding claim 2: The combination McCanne-Albert teaches the method of claim 1 further comprising the step of obtaining the service address from a redirection database [see *McCanne et al*; column 17, lines 10-31; column 23, lines 5-23]. By this rationale **claim 2** is rejected.

Regarding claim 3: The combination McCanne-Albert teaches the method of claim 1, wherein the source address and the service address are composed of an Internet address and a port [see *McCanne et al*; column 29, lines 5-22]. By this rationale **claim 3** is rejected.

Regarding claim 4: The combination McCanne-Albert teaches the method of claim 1, wherein the redirection header further comprises a redirection flag indicating whether a client having the source address is expected to perform a redirection to the service address [see *Albert et al*; column 16, lines 27-31; fig. 6, items 600, and 604]. By this rationale **claim 4** is rejected.

Regarding claim 5: The combination McCanne-Albert teaches the method of claim 4, wherein the redirection header further includes a permanent flag indicating

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whether the client is expected to perform the redirection permanently to the service address [see *Albert et al*; column 16, lines 42-46; fig. 6, items 600, 604 and 608]. By this rationale **claim 5** is rejected.

Regarding claim 6: The combination McCanne-Albert teaches the method of claim 4, wherein the redirection header further includes a once flag indicating whether the client is expected to perform the redirection once to the service address [see *Albert et al*; column 16, lines 57-67]. By this rationale **claim 6** is rejected.

Regarding claim 7: The combination McCanne-Albert teaches the method of claim 4, wherein the redirection header further includes a leased flag indicating whether the client is expected to perform the redirection to the service address as long as a lease is in force [see *Albert et al*; column 25, lines 66-67; column 26; lines 1-4]. By this rationale **claim 7** is rejected.

Regarding claim 8: The combination McCanne-Albert teaches the method of claim 1 further comprising the step of:

receiving, by a server in the cluster, an indication of redirection failure; and, providing a second redirection header to the packet, the redirection header including a service address belonging to an alternative third server [see *McCanne*; column 12, lines 42-47; fig. 1, items 14(1)-(2), and 14(M)]. By this rationale **claim 8** is rejected.

Regarding claim 9: The combination McCanne-Albert teaches the method of claim 1 further comprising the steps of: for each server of the server cluster:

responsive to transmission of a UDP packet [see *McCanne et al*; column 15, lines 40-44], creating and storing a record comprising information identifying the sender

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address and sender port, and recipient address and recipient port of the UDP packet [see *McCanne et al*; column 26, lines 26-34], and information reflecting the time of transmission [see *Albert et al*; column 20, lines 59-67; it is important to note that *Albert et al* disclose the time to live which is the time of the transmission];

responsive to additional transmission of UDP packet from same sender address and port to same recipient address and port [see *McCanne et al*; column 26, lines 26-34], updating said time information to reflect the time of said additional transmission [see *Albert et al*; column 20, lines 59-67];

periodically checking for said time information; and, removing said record if a predetermined period elapsed from said time of transmission to the time of said checking [see *McCanne et al*; column 6, lines 5-15]. By this rationale **claim 9** is rejected.

Regarding claim 10: The combination *McCanne-Albert* teaches the method of claim 9 further comprising the steps of:

composing an artificial UDP session related to each record comprising information identifying the sender address [see *McCanne et al*; column 26, lines 26-34],

counting periodically artificial UDP sessions resulting in the number of UDP sessions [see *McCanne et al*; column 26, lines 31-34],

counting or obtaining TCP sessions resulting in the number of UDP sessions [see *McCanne et al*; column 15, lines 40-44],

obtaining the total load of each server of the server cluster as a function of the UDP sessions and TCP [see *McCanne et al*; column 13, lines 6-16; fig. 21, items 10, 20, 80, and 2554]. By this rationale **claim 10** is rejected.

Regarding claim 11: The combination McCanne-Albert teaches the method of claim 10 further comprising the steps of:

using the total load of each server when performing the load balancing of the server cluster [see *McCanne et al*; column 27, lines 1-13]. By this rationale **claim 11** is rejected.

Regarding claim 12: The combination McCanne-Albert teaches the method of claim 10 further comprising the steps of:

using the total load of each server when controlling the usage of the communication links used by the server cluster. [see *McCanne et al*; column 27, lines 1-13]. By this rationale **claim 12** is rejected.

Regarding claim 13: The combination McCanne-Albert teaches the method of claim 2, wherein said redirection database further collects information regarding load on a selected server set, and wherein said information is used as criteria for selecting second server [see *McCanne et al*; column 17, lines 10-31; column 23, lines 5-23]. By this rationale **claim 13** is rejected.

Regarding claim 14: The combination McCanne-Albert teaches a method for redirecting network traffic comprising the steps of:

receiving a service request in a server, said request having indication of the request sender [see *McCanne*; column 24, lines 38-41, and 58-62];

selecting a second server for servicing the service request; and,
sending to said sender, a redirection indication to said second server [see *Albert*; column 6, lines 61-67; column 7, lines 1-7]. By this rationale **claim 14** is rejected.

Regarding claim 15: The combination McCanne-Albert teaches a server cluster having a plurality of member servers [see *McCanne et al*; fig. 1, items 10, and 14], and adapted to reroute network traffic, the cluster comprising:

a redirection database adapted to receive information indicative of a client request, and responsively provide a service address comprising an address of a target server capable of servicing said client request [see *McCanne et al*; column 17, lines 10-31; column 23, lines 5-23]; and,

a receiving server adapted to receive said client request and send information indicative thereof to said database [see *McCanne et al*; fig. 20, items 101-104, 201-204, 301-302, and 401-402; column 27, lines 26-33];

a transmitting server adapted to send said service address to the client that originating the request [see *Albert et al*; column 12, lines 51-59]. By this rationale **claim 15** is rejected.

Regarding claim 16: The combination McCanne-Albert teaches the server cluster according to claim 15, wherein said receiving server and said transmitting server are the same server [see *McCanne et al*; fig. 4, item 40; column 8, lines 60-64]. By this rationale **claim 16** is rejected.

Regarding claim 17: The combination McCanne-Albert teaches the server cluster of claim 15 wherein the redirection database is integrated in said transmitting

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server or receiving server or a server combining both [see *McCanne et al*; column 27, lines 26-33]. By this rationale **claim 17** is rejected.

Regarding claim 18: The combination McCanne-Albert teaches the server cluster of claim 15 wherein the target server is selected according to criteria comprising consideration of server load of a plurality of servers in the cluster [see *McCanne et al*; column 26, lines 65-67; column 27, lines 1-5]. By this rationale **claim 18** is rejected.

Regarding claim 19: The combination McCanne-Albert teaches the server cluster of claim 15, wherein a plurality of said member servers are adapted to act as said receiving server [see *McCanne et al*; column 26, lines 65-67; column 27, lines 1-5]. By this rationale **claim 19** is rejected.

Regarding claim 20: The combination McCanne-Albert teaches a redirecting client adapted for network traffic rerouting, said client comprising:

a first module adapted to send a service request to a first server [see *McCanne*; column 24, lines 38-41, and 58-62; column 6, lines 31-36]; and,

a second module to resend the service request to a second server, responsive to receiving a communication packet comprising a redirection header having a service address containing the address of said second server, or an indication thereof [see *Albert*; column 6, lines 61-67; column 7, lines 1-7], [see *McCanne*; column 26, lines 26-34]. By this rationale **claim 20** is rejected.

Regarding claim 21: The combination McCanne-Albert teaches the client of claim 20 further comprising a module adapted to resend said service request to said first server, responsive to service failure of said second server; wherein said resent

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service request contains indication of said service failure [see *McCanne*; column 12, lines 42-47; fig. 1, items 14(1)-(2), and 14(M)]. By this rationale **claim 21** is rejected.

Regarding claim 22: The combination *McCanne-Albert* teaches the client of claim 20, wherein said second module is further adapted to direct subsequent communications relating to said service request to said second server [see *McCanne*; column 12, lines 42-47; fig. 1, items 14(1)-(2), and 14(M)]. By this rationale **claim 22** is rejected.

Regarding claim 23: The combination *McCanne-Albert* teaches the client of claim 20 further adapted to send consequent service requests to said second server responsive to indication of doing so embedded within said redirection header [see *McCanne*; column 12, lines 42-47; fig. 1, items 14(1)-(2), and 14(M)]. By this rationale **claim 23** is rejected.

Regarding claim 24: The combination *McCanne-Albert* teaches the client of claim 20 wherein said first module is further adapted to indicate a redirecting capacity in said service request [see *McCanne*; column 19, lines 58-67]. By this rationale **claim 24** is rejected.

Regarding claim 25: The combination *McCanne-Albert* teaches the client of claim 24 wherein said indication of redirecting capacity is indicated in a manner that allows a server lacking redirection capability to service said service request [see *McCanne*; column 19, lines 58-67]. By this rationale **claim 25** is rejected.

Response to Arguments

6. Applicant's Request for Reconsideration filed on February 28th, 2005 has been carefully considered but is not deemed fully persuasive. However, because there exists the likelihood of future presentation of this argument, the Examiner thinks that it is prudent to address Applicant's main points of contention.

A. Applicant amended claim 1, after discovering error therein, wherein the claim was erroneously directed to transmitting the packet and redirection header to the service address and that neither the McCanne patent nor the Albert patent disclose this step.

B. Applicant disagrees relating claim 1 and its dependents, the assertion that "McCanne teaches a method for rerouting network traffic operating in conjunction with a server cluster comprising at least a first and a second server" by the Office.

C. The office further fails to show a prima facie case of obviousness as the office failed to show the references disclosing the claimed steps.

D. Regarding independent claim 15, both McCanne and Albert patents do not teach server cluster and the system.

E. Regarding claim 20, both modules are comprised within the client.

7. As to "Point A", it is the position of the Examiner that the amendment to claim 1 does not teach anything new. In Paragraph 0038 of the specification,

applicant discloses the following: "The source address and the service address are preferably composed of an Internet address and a port". The McCanne patent rightfully disclose a server that will return back to the client ^{on} ~~an~~ internet address and a port number to the client which could represent either the service address or the source address.

As to "Point B" it is the position of the Examiner that McCanne teaches a method for rerouting network traffic operating in conjunction with a server cluster comprising at least a first and a second server [see *rejection of claim 1 above*].

As to "Point C", it is also the position of the Examiner that there is sufficient grounds to establish a "prima facie case of obviousness" with an objective reason to combine the patents of McCanne and Albert [see McCanne, column 26, lines 30-34] Applicant's arguments are deemed moot in view of the above stated new grounds of rejection.

As to "Point D" and "Point E", it is also the position of the Examiner that applicant's argument is not persuasive and is not commensurate with the claim [see *rejection of claims 15 and 20 above*].

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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9. Any inquiry concerning this communication or earlier communications from examiner should be directed to Jude Jean-Gilles whose telephone number is (571) 272-3914. The examiner can normally be reached on Monday-Thursday and every other Friday from 8:00 AM to 5:30 PM.

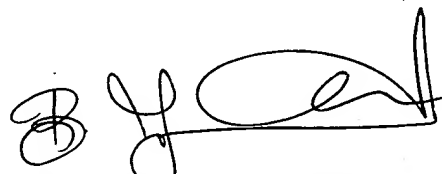
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wiley, can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3719.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Jude Jean-Gilles

Patent Examiner

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BUNJOB JAROENCHONWANIT
PRIMARY EXAMINER

JJG



June 09, 2005